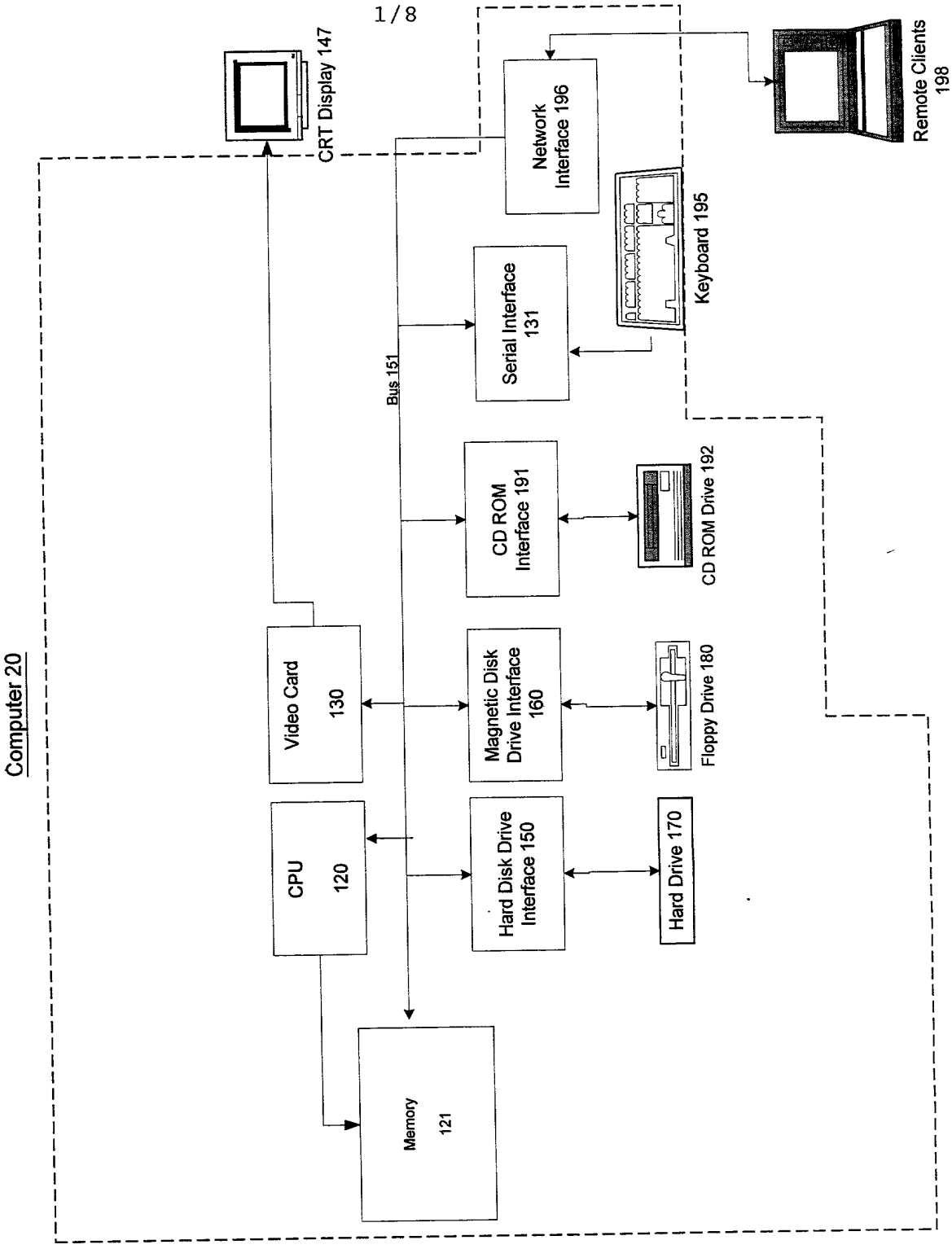

Computer 20
CRT Display 147
Network Interface 196
Remote Clients 198
Keyboard 195
Serial Interface 131
Bus 151
CD ROM Interface 191
CD ROM Drive 192
Video Card 130
Magnetic Disk Drive Interface 160
Floppy Drive 180
CPU 120
Hard Disk Drive Interface 150
Hard Drive 170
Memory 121

FIGURE 1

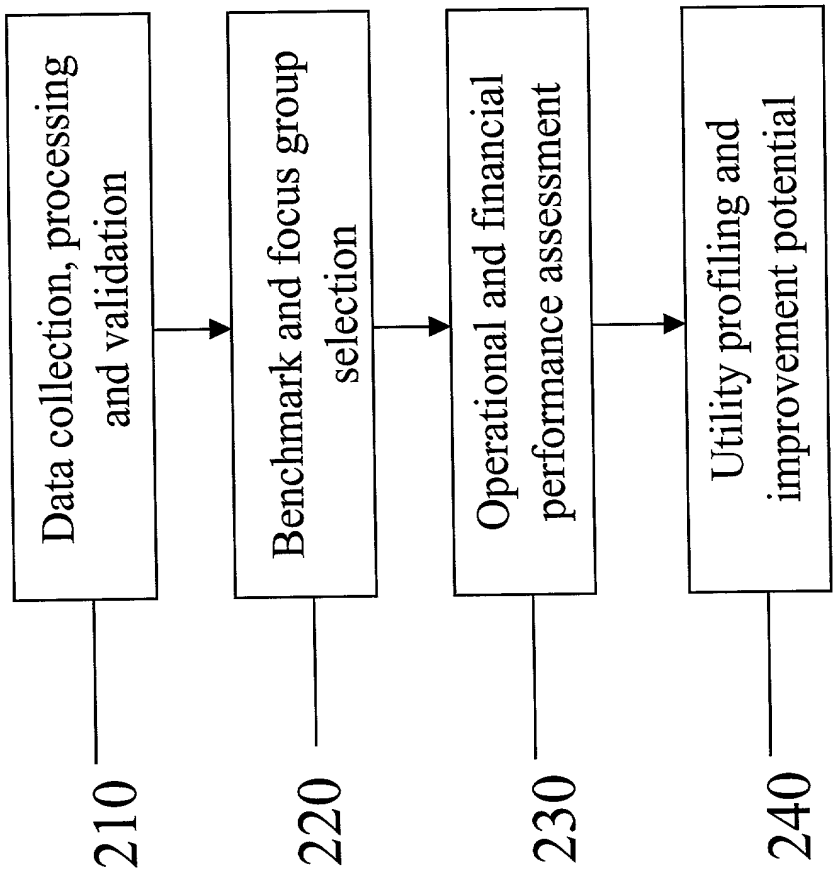

Data collection, processing and validation
Benchmark and focus group selection
Operational and financial performance assessment
Utility profiling and improvement potential
210
220
230
240

Fig 2

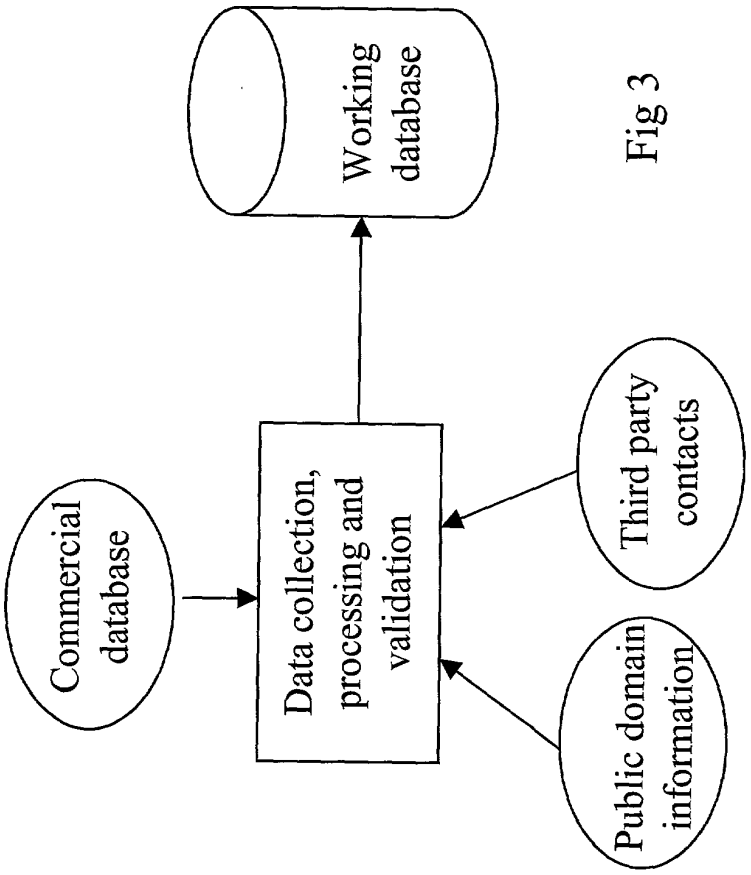


Fig 3

Tang et al 6/5/2007

Docket No.: ABTT-0254/B000701
Title: METHOD FOR EVALUATION OF ENERGY UTILITIES
Inventor(s): Tang, et al
Sheet 4 of 8
P. Milcetic 215-988-2063

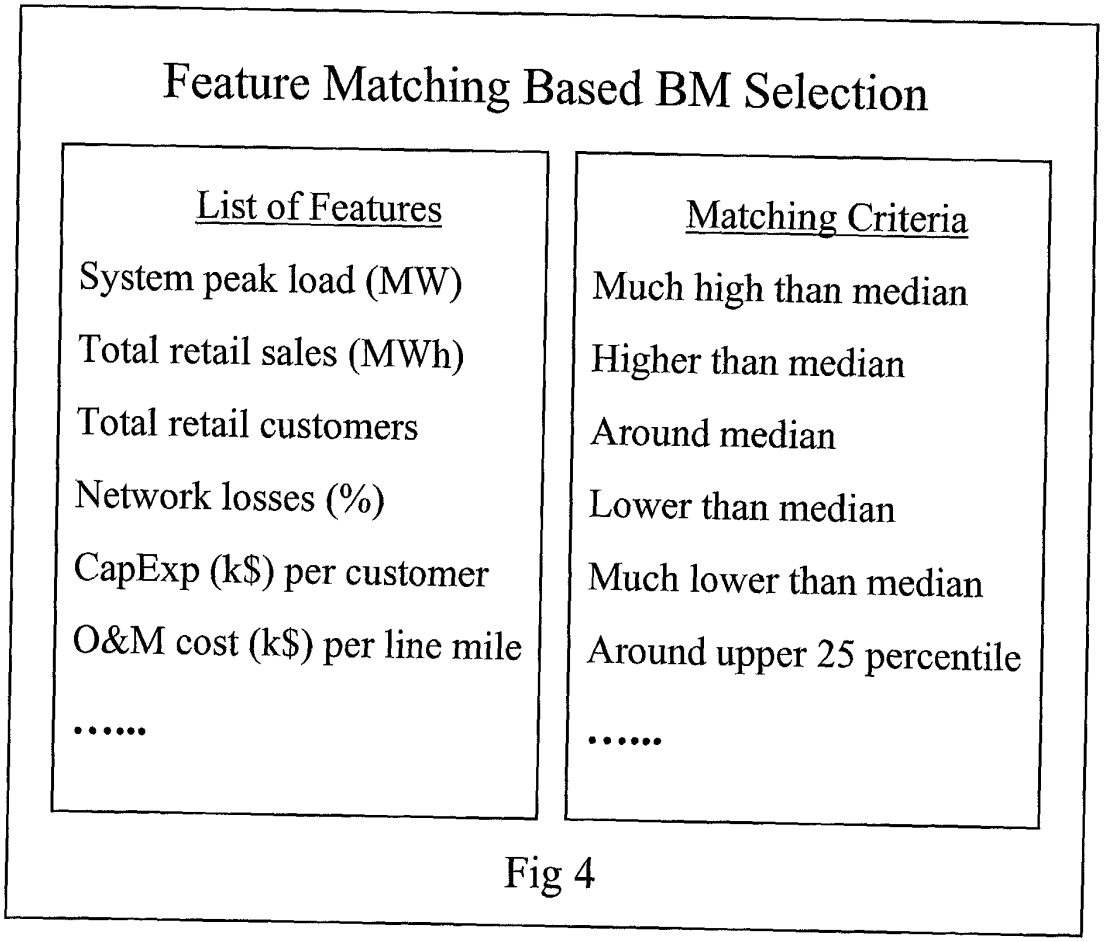


Fig 4

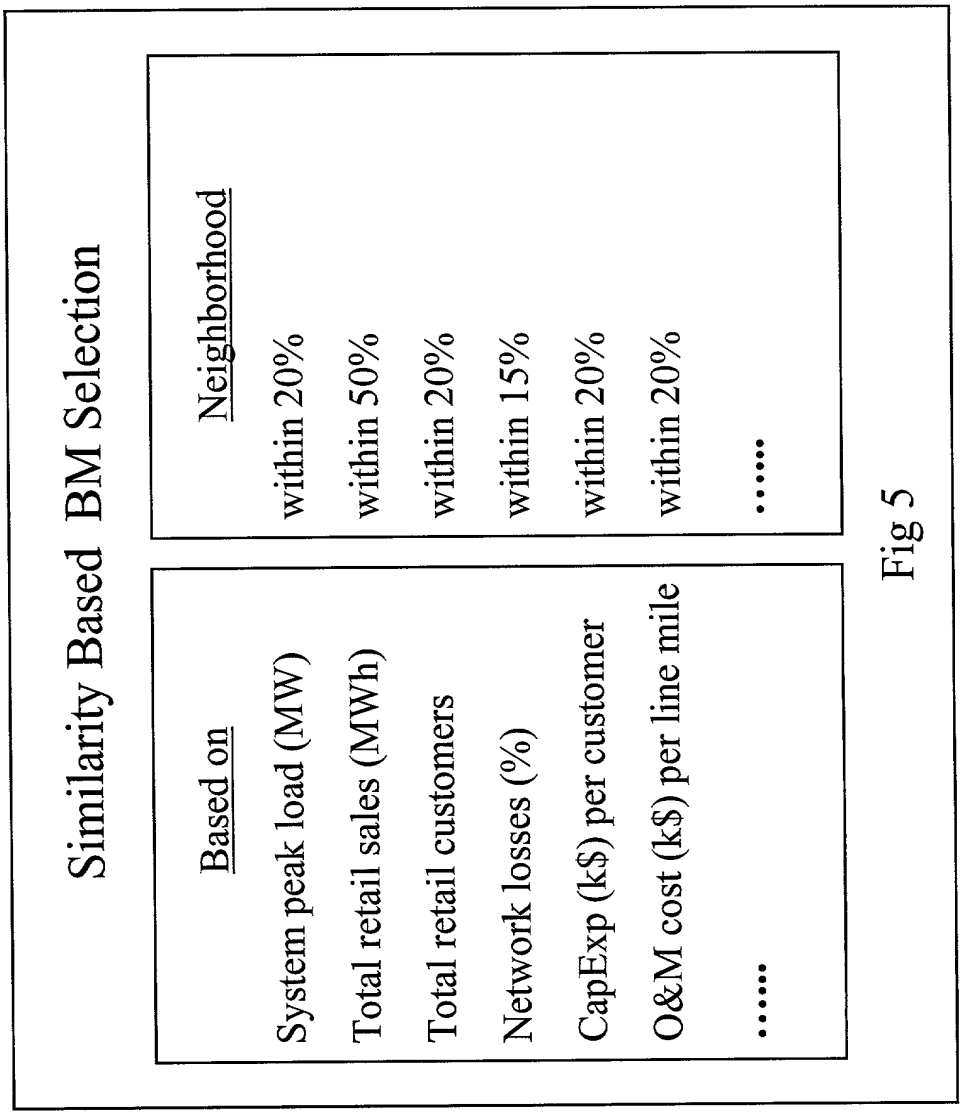

Similarity Based BM Selection
Based on
System peak load (MW)
Total retail sales (MWh)
Total retail customers
Network losses (%)
CapExp (k$) per customer
O&M cost (k$) per line mile
.....
Neighborhood
within 20%
within 50%
within 20%
within 15%
within 20%
within 20%
.....

Fig 5

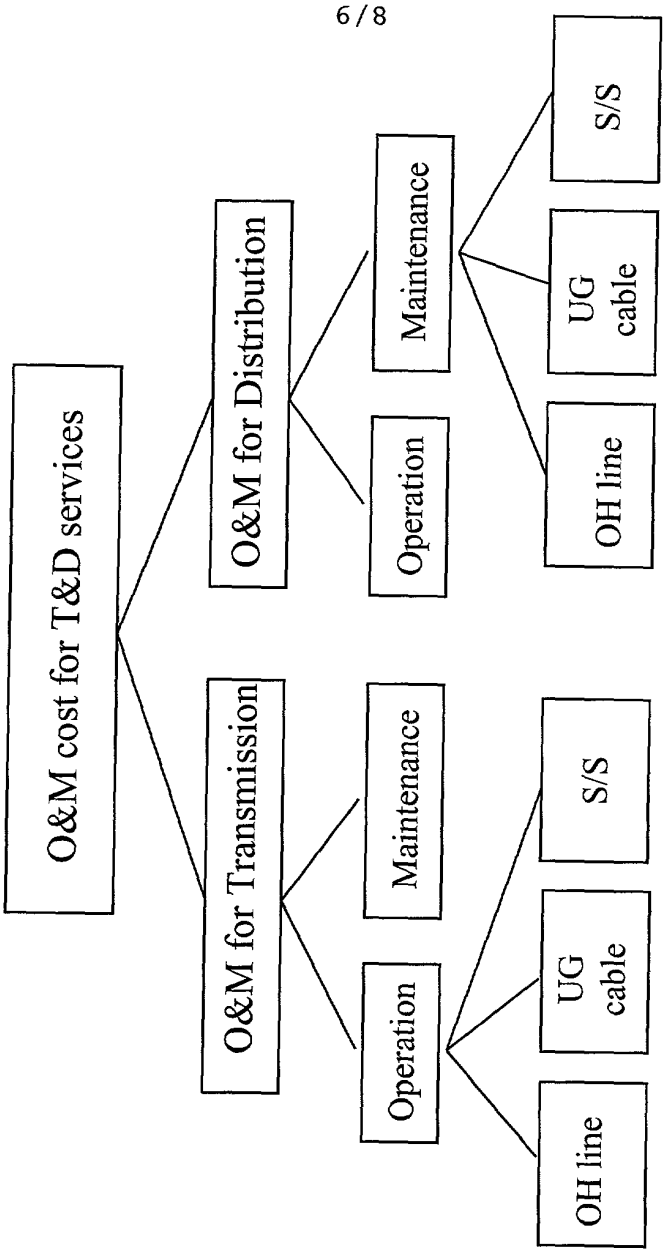

O&M cost for T&D services
O&M for Distribution
O&M for Transmission
Operation
Maintenance
Operation
Maintenance
OH line
UG cable
S/S
OH line
UG cable
S/S

Fig 6

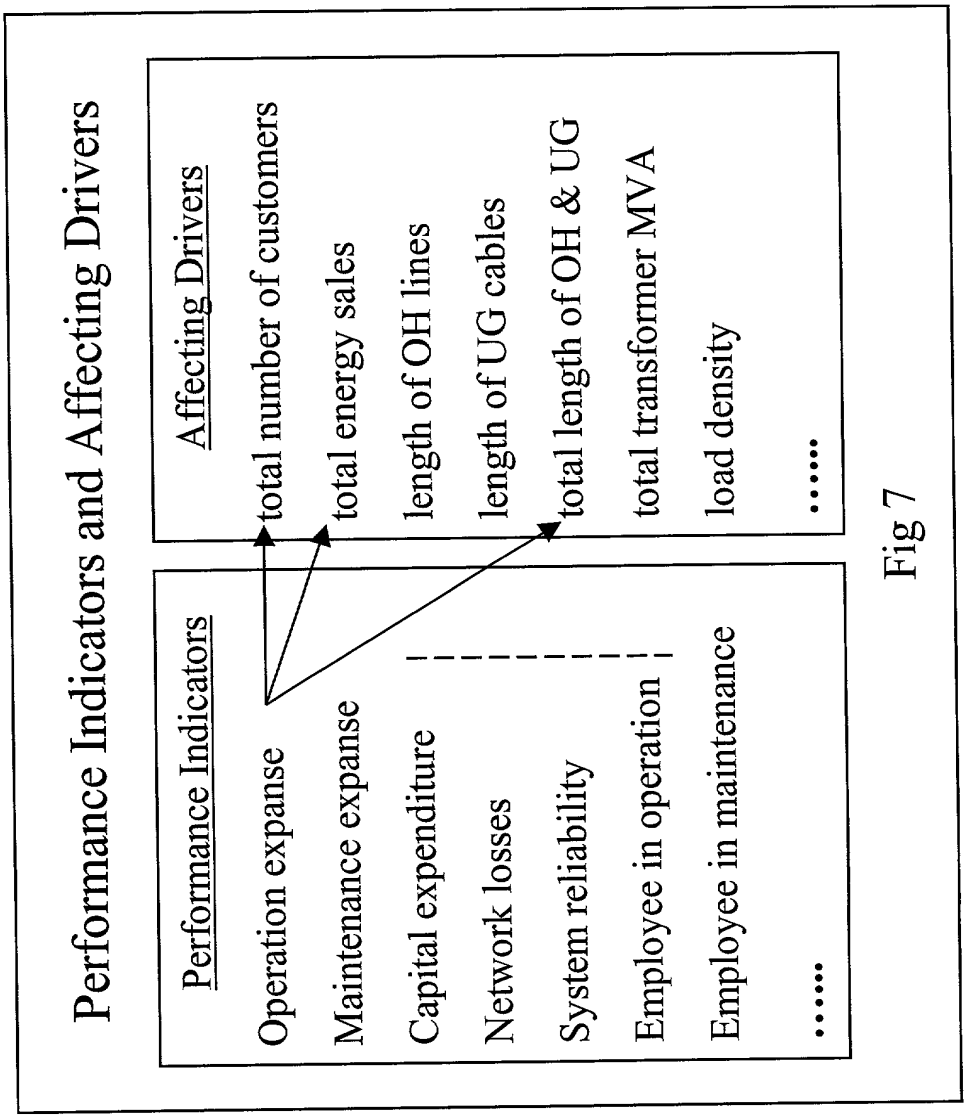
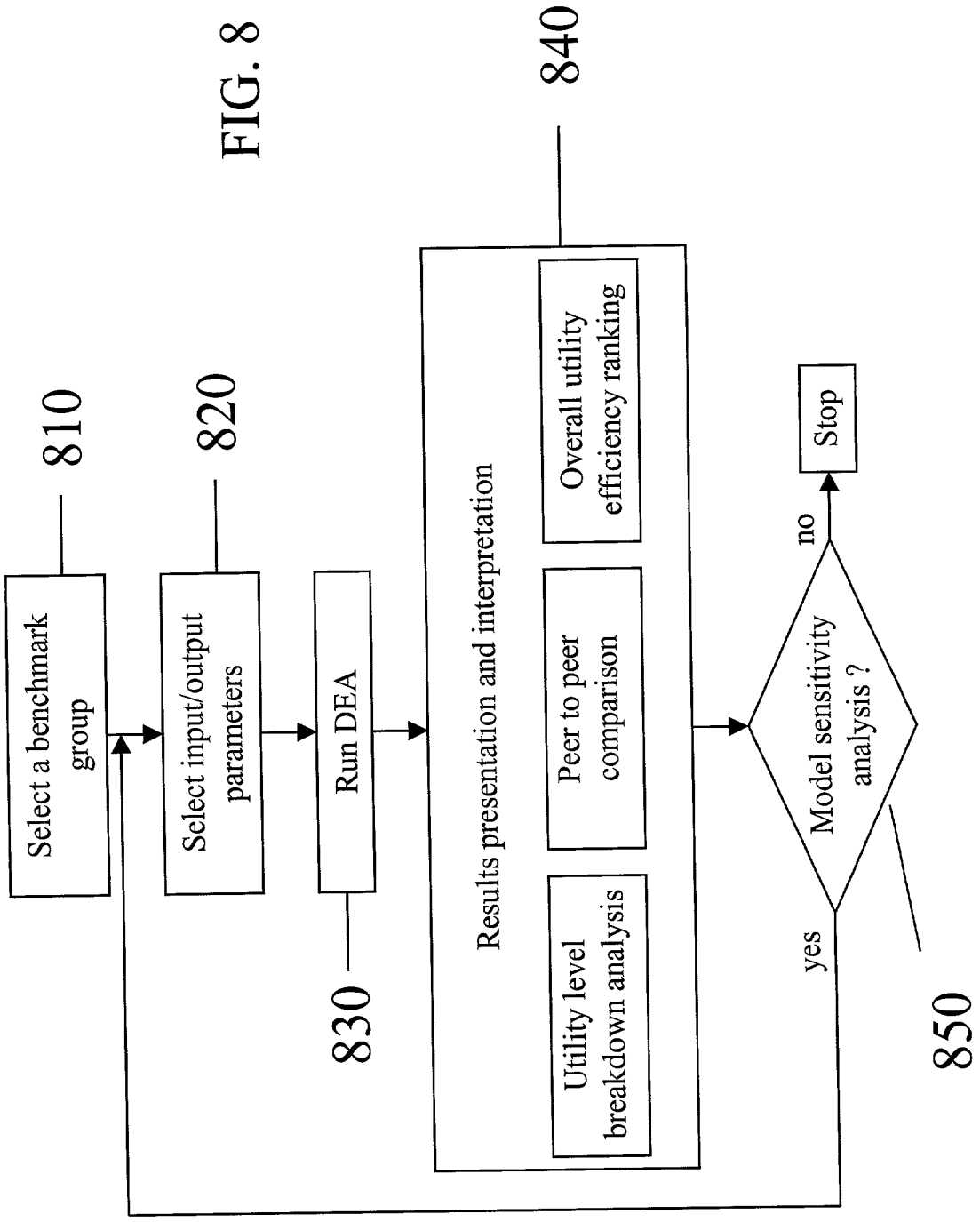

Performance Indicators and Affecting Drivers
Performance Indicators
Operation expanse
Maintenance expanse
Capital expenditure
Network losses
System reliability
Employee in operation
Employee in maintenance
.....
Affecting Drivers
total number of customers
total energy sales
length of OH lines
length of UG cables
total length of OH & UG
total transformer MVA
load density
.....

Fig 7

FIG. 8


810
Select a benchmark group
820
Select input/output parameters
830
Run DEA
840
Results presentation and interpretation
Overall utility efficiency ranking
Peer to peer comparison
Utility level breakdown analysis
Model sensitivity analysis ?
yes
no
Stop
850